

A NEW SPECIES OF HAEMAPHYSALIS FROM EAST AFRICA.

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Haemaphysalis africana, n. sp.

Male: Of very small size, 2 mm. long by 1.5 mm. wide, the widest point being at the middle of the length of the shield. Colour light yellowish brown, a little darker in the lateral and posterior portions of the dorsal shield, through which the ramifications of the intestines show as darker lines; the ventral surface is bluish in colour. Dorsal shield convex, covers all of the dorsal surface of the body; narrow in front, widely rounded behind; surface finely roughened over its entire extent, numerous, large, unequal, shallow punctuations scattered over its surface, most numerous in the posterior portions; two large shallow depressions one on each side of the median line near the posterior margin; cervical emargination not very deep; coxae I projecting slightly beyond the sharp cervical angles of the shield; cervical grooves wide, shallow, and short, converging toward the median line; lateral grooves well marked, but not deep, beginning at the anterior edge of coxae III and extending to the division between the ultimate and penultimate festoons; posterior festoons sharply marked, eleven in number, longer than wide, bearing a few large, shallow punctuations and a few small hairs on the posterior margin; no eyes; dorsal porose areas below the middle of the length of the shield. Rostrum with base rectangular, twice as long as wide; on dorsal surface, with posterior angles long and sharp; ventral surface of base as long as wide; palpi with article I very small and hidden, article II with lateral edges protracted in the posterior half into a long, sharp spine somewhat longer than the length of the article itself, this lateral spine is slightly protracted posteriorly on the dorsal surface; article III as wide as long on the dorsal surface, conical in outline; median edge of articles II and III protracted on dorsal surface over the mandibular sheath; ventral surface of article III bears article IV in a large concavity; article IV papilliform bearing on its tip a bunch of about fifteen short, stout spines and several tubercular spines near its base; article II bears nine large pinnate spines on the medio-ventral edge, article III bears four similar spines on the posterior portion of its medio-ventral edge; hypostome of usual type, numerous small denticles at tip followed on each half by a transverse row of three blunt teeth, these succeeded by eight transverse rows of four teeth each, with a final row of two teeth, the teeth extending farthest posteriorly on the lateral edges, all teeth except those at the tip are very sharp and of medium size; mandibles with outer apophyses bearing three teeth, the posterior tooth largest and widely separated from the two anterior teeth, inner apophysis slender, bearing below its tip a large tridentate transverse process. Ventral surface with numerous large, shallow punctuations unevenly distributed; genital pore opposite the anterior edge of coxae II, with an elongate semi-circular thickened portion forming the posterior margin; genital grooves deep, almost parallel until just anterior of the anus, when they curve slightly outward and pass beyond the anus, reaching nearly to the posterior margin opposite the festoon third from the middle; anus at the posterior third of the length of the body, with six large spines on each valve near the circumference; anal groove passes behind and close to the anus, not quite joining the genital grooves on each side in front; ano-marginal groove almost reaching the posterior festoons; no ventral

plates; posterior festoons set off anteriorly by a deep marginal groove reaching on each side to the stigmatic plates, these plates are situated at the level of the anus, and are short, comma-shaped, with the tail extending to the dorsal surface, plates light coloured, with darker rims; coxae I triangular, the remainder quadrilateral in outline, coxae I separated from coxae II, III, and IV by a wide space, the three posterior coxae being contiguous, a wide tooth on the posterior angle of coxae I, a similar sharp tooth on the postero-median angle of coxae IV, a wide blunt tooth on the middle of the posterior margin of coxae II and III, two long, stout hairs on the postero-lateral angle of each coxa. Legs light brown in colour, stout; tarsi abruptly attenuated at tip; pulvillum large, nearly as long as the claws.

Female (engorged): Length, 6 mm. by 4.5 mm. wide; sides nearly parallel, widely rounded at both ends. Colour dark chestnut brown when in formalin, bluish when alive, legs and rostrum light brown, dorsal shield same colour as body. Dorsal surface with numerous large, equal, shallow punctures, irregularly distributed, four short anterior grooves, the lateral ones slightly concave toward the median line; three long posterior grooves, the median straight and extending the farthest anteriorly and posteriorly, laterals concave toward the median line; posterior festoons present, but scarcely visible in the engorged specimen; dorsal porose areas at about the middle of the length of the body and close to the median line. Dorsal shield small, dark chestnut brown in colour, widely elliptical in outline, almost as wide as long; cervical emargination shallow; cervical grooves deep, at first converging, then nearly parallel, and extending over two-thirds of the length of the shield; a short median posterior groove; no eyes; punctuations large, unequal, widely separated and irregularly distributed. Rostrum with dorsal surface of base twice as wide as long, posterior angles prominent; ventral surface of base wider than long, but nearly semi-circular in outline; palpi similar to those of the male, except that the lateral projection of article II is wider; making articles II and III together conical; ventral tooth of article III is smaller and narrower than in the male; four pinnate spines on the posterior part of the medio-ventral edge of article III and eight similar spines on the medio-ventral edge of article II instead of three and nine respectively as in male; mandibles with outer apophysis bearing five teeth, two small and equal ones at the tip, and the other three progressively larger from tip to base, inner apophysis with the transverse process large and tridentate; hypostome of usual shape, numerous denticles at the tip, followed on each half by one transverse row of three large teeth, behind which is twelve rows of four large teeth each, rows rather irregular and teeth not so large or sharp as in male. Ventral surface similar to dorsal surface; genital pore small, opposite coxae II; genital grooves shallow, except in the middle of their length, diverging posterior of pore then nearly parallel till they reach the level of the stigmatic plates, where they diverge laterally, reaching almost to the posterior margin opposite the third festoon from the middle; anus slightly below the middle of the length of the body; anal groove scarcely visible in engorged specimen; ano-marginal groove well marked, and reaching the posterior margin; coxae all widely separated, coxae I close to the rostrum, all coxae similar to those of the male; stigmatic plates circular in outline, with the dorso-lateral tail scarcely indicated, colour almost white, with a darker border. Legs similar to those of the male, but comparatively shorter and more slender.

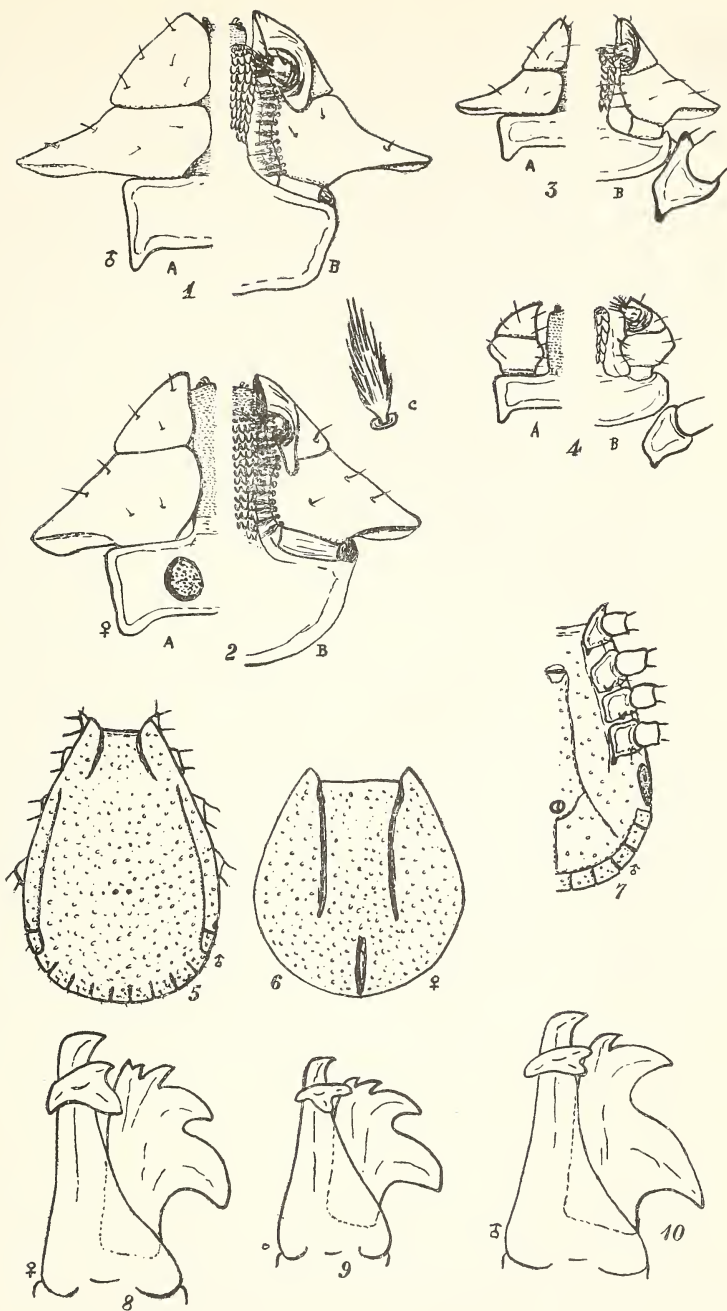


Plate XXXIV.

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| <p>1. Rostrum of male of <i>H. africana</i>.
 (a) Dorsal surface.
 (b) Ventral surface.</p> <p>2. Rostrum of female of <i>H. africana</i>.
 (a) Dorsal surface.
 (b) Ventral surface.
 (c) Pinnate, spine enlarged.</p> <p>3. Rostrum of nymph of <i>H. africana</i>.
 (a) Dorsal surface.
 (b) Ventral surface.</p> | <p>4. Rostrum of larva of <i>H. africana</i>.
 (a) Dorsal surface.
 (b) Ventral surface.</p> <p>5. Dorsal shield of male of <i>H. africana</i>.
 6. Dorsal shield of female of <i>H. africana</i>.
 7. One-half of ventral surface of male of <i>H. africana</i>.
 8. Mandible of female of <i>H. africana</i>.
 9. Mandible of nymph of <i>H. africana</i>.
 10. Mandible of male of <i>H. africana</i>.</p> |
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Nymph (engorged): Length 2 mm. by 1 mm. wide; narrowly rounded in front, widely rounded behind. Colour bluish black. Dorsal surface with numerous large irregularly distributed punctuations, some of which bear short whitish hairs; two short anterior dorsal grooves close to median line and slightly concave; three posterior grooves, the median straight and extending from the anterior grooves to the posterior margin; posterior festoons distinctly marked. Dorsal shield light brown in colour, with the posterior portion darker; large; almost circular in outline; cervical emargination shallow and wide; cervical grooves shallow, converging and extending half the length of the shield; surface finely granulated; no eyes; coxae I extend slightly beyond the cervical angles of the shield. Ventral surface similar to the dorsal; genital pore absent; genital grooves begin opposite coxae IV, diverge and reach the postero-lateral margin at about the third festoon from the middle one; anus small, just below the middle of the length of the body; anal groove pointed behind, and reaching the genital grooves on each side in front; ano-marginal groove nearly reaches the posterior margin; stigmatic plates large, whitish, nearly circular in outline, situated at the level of the anus; coxae and legs similar to those of the female, all light brown in colour; an additional pair of stigmatic pores between coxae I and II on the lateral margin of the body. Rostrum light brown in colour; base with dorsal surface twice as wide as long, posterior angles prominent; article I of palpi small; article II wider than long, posterior portion of outer edge prolonged laterally into a sharp tooth; article III as wide as long, conical, median edge prolonged over the mandibular sheath; both articles II and III valvate; article IV small and papilliform and extending ventrally.

Larva (engorged): Length 1 mm., width 0.6 mm. Colour bluish, except the legs, shield, and rostrum, which are light brown. Dorsal surface with anterior and posterior grooves similar to those of the nymph; a few short, light-coloured hairs; a marginal groove slightly indicated, extending from the shield to about the festoon second from the median one; caudal festoons well marked. Dorsal shield small, covering hardly one-third of the length of the body, heart-shaped in outline, wider than long, surface reticulated; cervical emargination shallow; cervical grooves deep, concave outward, and extending almost to the postero-lateral margin; no eyes; coxae I project very much beyond the cervical angles of the shield. Ventral surface similar to dorsal; genital grooves widely separated, broken, reaching almost to the posterior margin; anus near the posterior third of the length; anal groove does not join the genital grooves; ano-marginal groove deep, and nearly reaches the posterior margin; coxae well separated, rectangular in outline, each with a small tooth on the posterior margin; three pairs of stigmatic openings, one pair between coxae I and II on the lateral margin of the body, the second pair directly posterior of and close to coxae II, the third pair posterior of coxae III. Legs, three pairs, stout, light brown in colour. Rostrum with base three times as wide as long on the dorsal surface, posterior angles not very prominent; articles II and III of the palpi when taken together are longer than wide, triangular in outline, widest near the middle of article II, but article II is not protracted laterally into such a sharp spine as in the nymphs and article IV in a pit on the ventro-median surface of article III, papilliform with several stout hairs on the tip; hypostome small, spatulate, with five or six rows of two sharp teeth each on each half; mandibles similar to those of the male except that the lower tooth on the outer apophysis is closer to the upper two teeth.

Hosts : On the bird known as Burchell's Coucal, *Centropus burchelli*.

Habitat : Manhiça, Lourenço Marques District, Portuguese East Africa.

The above description was made from four males, one engorged female, three engorged nymphs, and six engorged larvae, taken from a Burchell's Coucal (*Centropus burchelli*), shot at Manhiça, in the northern part of the district of Lourenço Marques, Province of Mozambique, on the 3rd of June, 1908. It seems rather remarkable that all four forms, i.e. males, females, nymphs, and larvae should be found on the host at the same time.

So far as we know at present only one other species of *Haemaphysalis* occurs in South Africa. This is *H. leachi*, a common pest of dogs and the transmitter of Piroplasmiasis of the dog. *H. africana* can be easily separated from *H. leachi* by the following characters :—

H. leachi.—

1. Male with body elongate and slender.
2. A large tooth projecting posteriorly on both dorsal and ventral sides of the lateral prolongation of article II of the palpi, in male, female, and nymph.
3. Females large and more or less ovoid in outline ; dorsal shield oval in outline.
4. Shield of nymph pentagonal.
5. Larva with palpi similar to those of the adults, bearing the prominent lateral prolongation of article II.

H. africana.—

1. Male smaller, lighter coloured, and not so elongate and slender, punctuations on the dorsal shield larger and fewer in number.
2. No ventral posteriorly projecting tooth on article II of the palpi, and the dorsal tooth largely reduced. The same fact is true in the nymph.
3. Females small and quadrilateral in outline ; the dorsal shield is nearly circular in outline.
4. Shield of nymph nearly circular in outline.
5. In the larva the palpi do not have such a prominent lateral prolongation ; this prolongation is shorter and wider, making the palpi appear short spindle shaped.

The type specimens are in my private collection.